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BRITISH FORMS OF VALVES

AND VALVED BRASS INSTRUMENTS

Arnold Myers

To a large extent, valved brass instruments in Britain followed French models. The cornet à pistons was extensively imported, and saxhorns were introduced by the Distin family in 1844, very soon after their development by Sax; they became immediately popular¹. British makers made their own versions of the French instruments, and at the same time cheaper instruments made in France and Germany were widely imported². Although the majority of the valved brass instruments used in Britain, not least in the popular brass band movement, owe much to continental invention, British makers were not idle, either in inventing and improving valve designs or in producing distinctive models of valved instruments. In this essay we discuss some of the valves and instrument models which were developed beyond the experimental phase into production models.

VALVE DESIGNS

Charles Claggett (born 1737) invented possibly the earliest brass instrument valve, taking out a British patent³ and wrote in 1793 about his chromatic trumpets and horns. Exactly how his invention worked is not known, and there is no evidence that it was put into production by any maker.

John Shaw of Glossop took out a patent⁴ for a valve system that could be applied to any brass instrument. Shaw's "tranverse spring slide" was an early form of double-piston valve. For a trumpet, Shaw used four valves, three ascending and one descending. All were independent: the ascending valves raised the instrument's pitch by a semitone each by cutting out tubing, and the descending valve lowered it by a semitone by adding tubing. Shaw's trombone was equipped with six valves. According to the requirements of different instruments, various numbers of valves - up to six - could be used. The valves were not equipped with any tuning-slides⁵. No surviving instruments with this type of valve exist, and again there is no evidence that it was put into production by any maker. It is not known if Adolphe Sax was aware of Shaw's invention of independent valves, but in 1852 Sax took out his patents on the independent valve in 1852 and 1859 (the earliest surviving numbered instrument dates from

¹ Eugenia Mitroulia and Arnold Myers, The Distin Family as Instrument Makers and Dealers. Scottish Music Review (online), 2, No 1, Posted 21.1.11. <http://www.scottishmusicreview.org/index.php/SMR/article/view/20>

² For examples, see Arnold Myers (ed). *The Glen Account Book*. Edinburgh: Edinburgh University Collection of Historic Musical Instruments, 1985.

³ Charles Claggett, *Improvements to French horn or trumpet*. G.B Patent No 1664, 1788.

⁴ John Shaw, *Tranverse spring slide*. G.B. Patent No 5013, 1824.

⁵ For illustrations see Reginald Morley-Pegge, *The French Horn: some notes on the Evolution of the Instrument and of its Technique* 2nd edition. London: Benn, 1973, pp.36-38.

1864)⁶.

A trumpet by Charles Pace of London from the collection of Colonel Thomas Shaw-Hellier, which is on long-term loan to the University of Edinburgh, incorporates an interesting valve type, see Figure 1.



Figure 1. Horizontal valves on Pace F trumpet, Edinburgh University Collection of Historic Musical Instruments (3286). Photo: Sabine Klaus.

The instrument dates from circa 1840 and stands in 6-ft F with crooks for lower tonalities. As in some other trumpets of the period, the valves are arranged horizontally so that the instrument has a general appearance and playing posture similar to that of the English slide trumpet. However, the valves are a modification of the Stölzel valve with both ends of the valve casing forming part of the windway; the piston is controlled by a touchpiece working in a parallel section of tubing which contains the spring with a connecting piece passing through a slot in the side of the valve casing; the windway is diverted through one of two loops on the side of the valve casing - through the shorter loop of the two when the valve is not operated, and through the longer loop when it is operated.

The mechanism of a piston moving in the valve casing which forms part of the windway at both ends, and is controlled by a touchpiece working in a parallel section of tubing containing the spring, was further developed by George Samson in 1862⁷. Again, there is a connecting piece passing through a slot in the side of the valve casing. However, in the Samson valve there is simply an additional loop brought into play when the valve is operated, rather than the alternative loops of the Pace valve. The Samson valve, also known as the “finger-slide valve” was improved and made by Charles Goodison, and sold by Rudall, Rose and Carte. The

⁶ Eugenia Mitroulia and Arnold Myers, Adolphe Sax: Visionary or Plagiarist? *Historic Brass Society Journal* 2008 **20** pp.93-141.

⁷ G.R. Samson, *Improvements in Valves or Cylinders for Wind Instruments* G.B. Patent No 1245, 1862.

eleven known surviving instruments with this valve (cornet, eight vocal horns, baritone and a euphonium) are evidence of regular production over a period of some five years. An example is shown in Figure 2.



Figure 2. Vocal horn with Samson finger-slide valves. Rudall Rose Carte & Co., London, c 1865. Edinburgh University Collection of Historic Musical Instruments (6095). Photo: Antonia Reeve.

A more fruitful invention of John Shaw was his swivel valve⁸. This was a solution to the problem of abrupt bends in the windways of valve designs such as the Stölzel valve, which was widely used at the time. Figure 3 shows Shaws drawing from the patent.

⁸ John Shaw, *Improvements in the arrangement and construction of wind musical instruments*. G.B. Patent No 7892, 1838.

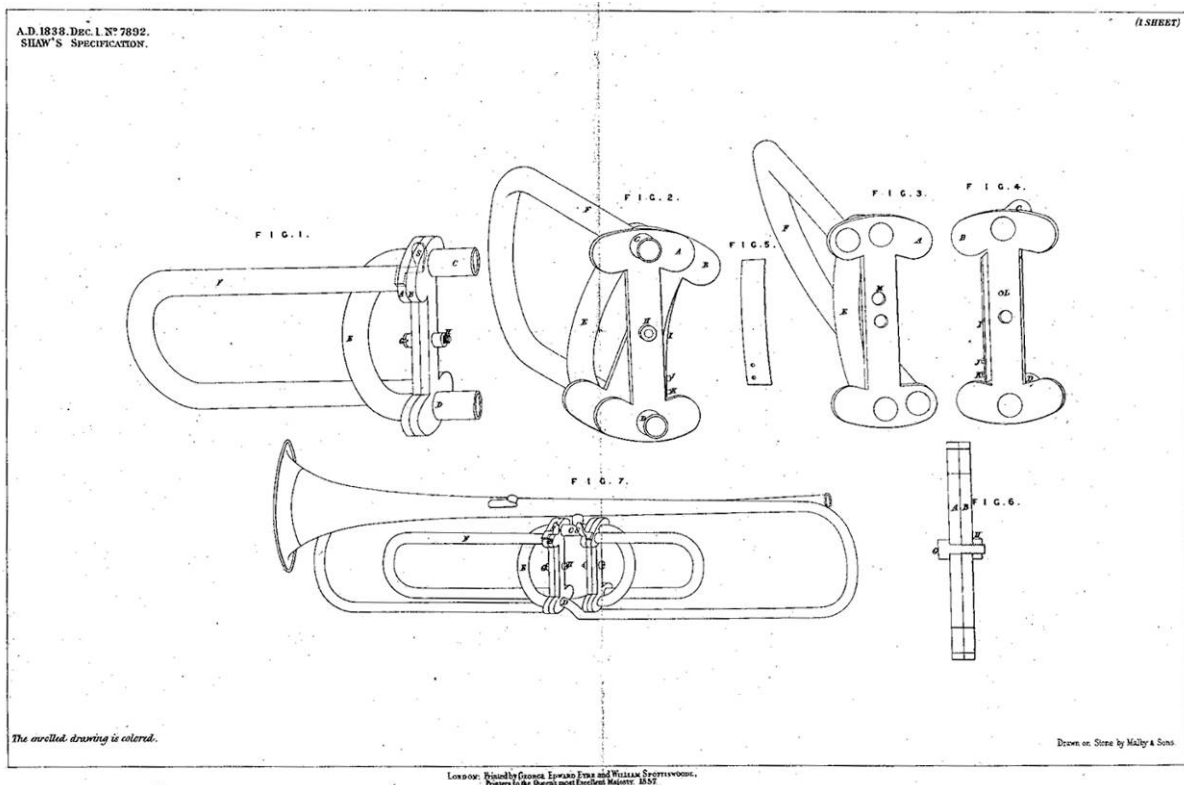


Figure 3. Shaw's swivel valve patent drawing, 1838 (courtesy of Intellectual Property Office).

There is a trumpet following this design in the Metropolitan Museum of Art, New York (89.4.2532). The elimination of the abrupt bends is achieved at the expense of a slow action and exposure of the plates to the air when the valve is operated. These problems were subsequently ameliorated: Shaw mentioned in his patent that the fixed and moveable plates could also be made “circular so as never to expose their internal surface to dust or other injury”, and all subsequent extant instruments based on this patent have disc valves⁹. By 1840 Shaw had entered into an arrangement with the London maker John Augustus Köhler, who made and sold the instruments using his disc valves. Köhler went on to produce more than 1000 disc-valve instruments over some fifteen years under the appellation “Patent Lever”, which refers to the push-rods which actuate the rotation of the discs. In 1842 Shaw published a design in which the loop of extra tubing added by the valve is attached to the fixed disc rather than the moving disc, and two much shorter semicircular loops are soldered to the moving disc; the fixed disc, like the rotating one, now had four rather than two perforations. This lighter valve action was adopted for production models. A subsequent design change was the replacement of watch springs in drums with compression springs: the disc-valve corneopane in Figure 4 is an early examples with watch springs. Forty-eight disc-valve instruments, mostly corneopaneans and cornets, are known to survive. No other makers appear to have made instruments following models of Shaw and Köhler, although the principle was subsequently applied to the quick-change valve on cornets (switch valve for B-flat or A) by Ernst Couturier and John Heald in the U.S.A.

⁹ Frank Tones, Sabine Klaus and Arnold Myers, Shaw, Köhler and the Disc Valve in Britain. *Galpin Society Journal* 2013, **LXVI**, pp.99-116, 249.



Figure 4. Cornopean with Patent Lever valves. Köhler, London, c 1845. Edinburgh University Collection of Historic Musical Instruments (6107). Photo: Antonia Reeve.

BLAIKLEY COMPENSATING PISTONS

One of the problems inherent with valved instruments is that of valves used in combination. If one valve lowers the pitch by one semitone, and another valve lowers the pitch by two semitones, operating the two valves together does not add quite enough tube length for three semitones. The problem is worse for valves lowering the pitch by larger intervals. The calculations are more complex than the simple proportions often presented, since valves increase the amount of cylindrical tubing in the windway, and affect the bore profile as well as the air column length. Typically, a three-semitone 3rd valve used in combination with a five-semitone 4th valve will give a lowering of nearer eight rather than nine semitones. Various ways of overcoming this problem have been devised, some of great complexity. In compensating valves, the loop of tubing brought into play by one master valve (usually the valve with the longest additional tube length) passes through the other valves which then add short lengths of tubing when used in combination with the longest-loop valve to give the correct total sounding length. The windway then returns to the master valve from which it leads to the bell. See Figure 5 for a layout of compensating valves.

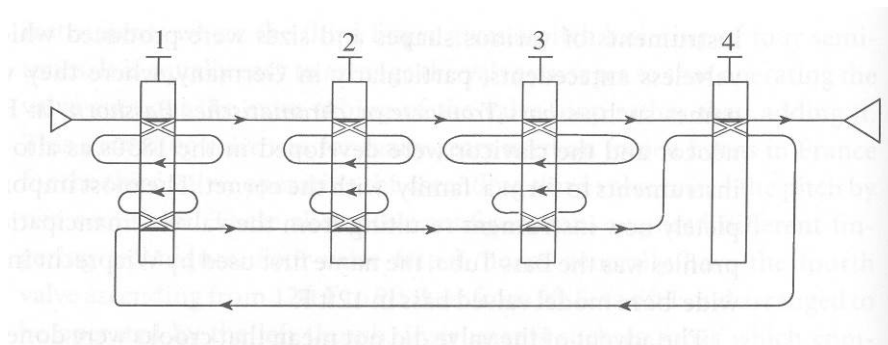


Figure 5. Schematic diagram of 4-valve compensating valves. Inside the piston, the solid line shows the windway with the valve not operated, the double lines show the windway with the valve operated.

The Works Manager of Boosey & Co, D.J. Blaikley, is often given the credit of inventing the principle of compensating valves. Indeed, compensating instruments were a very successful development for Boosey & Co and subsequent manufacturers. However, the idea had already been exploited by Gautrot in Paris as the *système equitonique*. This system was patented in Britain¹⁰. Gautrot's *equitonique* instruments had four Périnet-type valves, with two distinct sets of passages through valves 1-3 (six passages per piston). The first mention of compensating valves in the Boosey & Co Work Shop Order Books was in June 1873, when a C Euphonion with "perfected" valves was produced; the pistons were "New model 5 passages to each pump". The main difference between the Gautrot Equitonique system and Blaikley's Compensating Pistons is that the Gautrot pistons each have six passages, whereas the Boosey pistons have only five passages in each piston. One passage in the Blaikley piston has a dual function and is "in circuit" whether the valve is operated or not. Blaikley's patent¹¹ exclusively covered the 3-valve compensating pistons with the 3rd valve acting as the master, and the 1st and 2nd pistons having five passages. Boosey & Co had, however, made a 4-valve compensating instrument as early as 1874 in which (like the Gautrot *equitonique* instruments) the 4th valve is the master. Figure 6 shows the 3-valve compensating valves.

¹⁰ Pierre Louis Gautrot, *Improvements in musical instruments*. G.B. Patent No 741, 1865.

¹¹ D.J. Blaikley, *Brass Musical Wind Instruments*. G.B. Patent No 4618, 1878.



Figure 6. Back and front views of 3-valve contrabass in 16-ft C, Boosey & Co, 1883, with Blaikley compensating valves. Edinburgh University Collection of Historic Musical Instruments (4200). Photo: Antonia Reeve.

Blaikley's "Compensating Pistons" were very successful, and have continued in use to the present day for euphoniums and brass basses. The availability of brass instruments that were well in tune, such as those produced by Boosey & Co, was one reason for the high standards and ambitious repertoire of brass bands in Britain.

DOUBLE PRINCIPLE

A different solution to the intonation problems of valves used in combination has been designated "double principle". Here the windway leads from the mouthpipe to one master valve (usually but not always the valve with the longest additional tube length). From the master valve the windway has two alternative sets of tubing through the other valves - one short and the other long. The other valves when operated add slightly longer lengths of tubing to the longer alternative set of tubing than to the shorter. The windway then returns to the master valve from which it leads to the bell. Figure 7 shows the 4-valve double-principle valves.

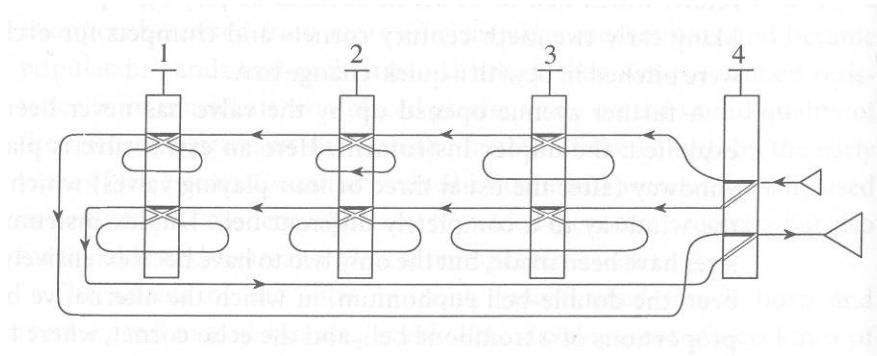


Figure 7. Schematic diagram of 4-valve double-principle valves. Inside the piston, the solid line shows the windway with the valve not operated, the double lines show the windway with the valve operated.

This system is most familiar today in the rotary-valve full double french horn (developed in 1897), but the double principle had long before been the subject of a patent by Gustave Besson¹². No instruments following this patent are known to survive and there is no evidence that any were marketed. In France the Arban Bouvet models and the Sudre “Arban Compensateur” instruments were produced in the 1880s.

Boosey & Company's main competitors in the brass band market of the British Empire were the firm of Besson. The success of D.J. Blaikley's “compensating pistons” models for high-quality instruments probably prompted in response Besson's 1890 British patent¹³. Innovative valve designs such as the “register” had been made by Besson in Paris, but the production of the London Besson factory would appear to have been standard valve designs up to this point. The new model was advertised as the “Victory Compensator-Transpositor” model¹⁴. The 1890 patent was a rather complicated system with piston valves on the double principle. On the “Victory” three-valve instruments as built, the 1st and 2nd valves are double with the 3rd as master. However, the shorter passage from 3rd to 1st valve (the windway when 3rd valve is not operated) actually passes through the 2nd and 1st pistons before re-entering 1st to continue as normal back to 3rd (via 1st and 2nd valve loops if 1st or 2nd valves are operated). This useless passage through the 1st and 2nd valves only added weight to the pistons and increased the risk of leaks: it may have been introduced merely to differentiate the Victory model from previous designs such as the 1859 patent and the Arban models. In 1895 the London Besson business was sold. It became Besson & Co. and was separate from the Paris firm. Production of Victory euphoniums (“basses”) appears to have started in 1896¹⁵. The production “Victory basse” was double-principle with the 4th valve as the master, see Figure 8. Only 3-valve cornets and 4-valve euphoniums are known to have been made as Victory models.

¹² Gustave Besson, *Improvements in musical instruments with piston or cylinder valves* G.B. Patent No 2887, 1859.

¹³ Fontaine Besson, *New and Improved Valved Musical Instruments*. G.B. Patent No 6649, 1890.

¹⁴ An advertisement in *Brass Band News*, February 1893, claimed that the “Victory Compensator-Transpositor” cornet was patented “in all nations”.

¹⁵ Stock Books of F. Besson and Besson & Co in the Boosey and Hawkes archive at the Horniman Museum, London.



Figure 8. Back and front of euphonium in B-flat, 4-valve double principle. Besson & Co, London, 1897. Edinburgh University Collection of Historic Musical Instruments (5715). Photo: Raymond Parks.

At the same time, Boosey & Co produced some double-principle instruments. To avoid infringing the Besson patent of 1890, the 1st valve acts as master and the 2nd and 3rd each have two alternative valve loops of slightly differing lengths. D.J. Blaikley applied for a patent, 28 November 1892, but it was not granted. The surviving Boosey “double-principle” instruments include a few E-flat soprano cornets, several B-flat cornets, and some E-flat tenor horns; all are piston-valve models made in the period 1893 - 1904. Confusingly, these instruments are stamped “COMPENSATING PISTONS” as in the inscriptions on the actual Blaikley compensating instruments. A Boosey “double principle” tenor horn from 1896 is shown in Figure 9.



Figure 9. Tenor horn in E-flat, 3-valve double principle. Boosey & Co, London, 1896. Edinburgh University Collection of Historic Musical Instruments (4277). Photo: Dominic Ibbotson.

In 1903 Besson & Co patented their so-called “Enharmonic” valves which were simpler than the Victory models¹⁶]. In these, the 1st and 2nd valves are double, with the 3rd as master: the windway leads from mouthpipe to 3rd valve, then via one of two alternative windways through the 1st and 2nd valves back to the 3rd valve, and from there to bell. A four-valve version was produced in which the mouthpipe leads to 3rd valve, the 1st and 2nd valves are double with the 3rd valve as master; the 4th valve is compensating with respect the 3rd valve as master. Judging by the number of surviving examples, the “Enharmonic” models were more successful than the Victory models. Practically the whole range of valved brass was made with “Enharmonic Patented” piston valves from 1905¹⁷. Examples of the 3-valve and 4-valve Besson “Enharmonic Patented” double-principle instruments are shown in Figures 10 and 11.

¹⁶ Besson & Co., *Improvements in or relating to Wind Musical Instruments of the Character which, for the Production of Various Pitch or Tones, have their Tubes Variously Lengthened by the Operation of Pistons or Valves*. G.B. Patent No 12,489, 1903.

¹⁷ Enharmonic valves were first mentioned in *Brass Band News* in the issue for September 1906, where it is claimed that they “had been used with great success in contests of 1905 and 1906”.



Figure 10. Back and front of baritone in B-flat, 3-valve double principle. Besson & Co, London, c 1920. Edinburgh University Collection of Historic Musical Instruments (2990). Photo: Raymond Parks.



[Figure 11. Back and front views of tuba in E-flat, 4-valve double principle / compensating. Besson & Co, London, c 1911. Edinburgh University Collection of Historic Musical Instruments (3617). Photo: Antonia Reeve.

After a certain date, probably 1923, Besson & Co discontinued double-principle models and adopted compensating valves for the larger instruments. Today the compensating valve system is used on many euphoniums and tubas, and also in rotary valve form on some french horns. Instruments with the “full double” principle are heavy, since the valves, other than the master, have two full-length valve loops; consequently this system has rarely been used on tubas, but it is the preferred valve pattern for french horns. With small instruments, sometimes the 3rd valve is tuned to lower the pitch by slightly more than three semitones, and it is then not used on its own - the player can then “lip” any wayward notes up or down sufficiently to obtain reasonably good intonation. It is common with trumpets and cornets to fit the 3rd valve tuning-slide (sometimes the 1st as well) with a finger-ring or sprung lever so that it can be moved by the player, at least in slow-moving passages.

INSTRUMENTS

CORNOPEAN

The cornopean was a form of instrument which was widely used in Britain in the 1830s and 1840s. Cornopeans were almost always pitched in 4½-ft B-flat with a short shank (in some cases the mouthpiece fits directly into the instrument or has a short bit for B-flat). It had a shank for A, a shank or crook for A-flat, and crooks for G and F, sometimes with crooks or couplers to give E and E-flat. The wide mouthpiece receiver and nearly cylindrical shanks and crooks gave the cornopean the acoustical characteristics of the trumpet; present-day revivals of cornopean playing confirm its significantly brighter timbre than that of the French cornet à piston with tapering shanks and crooks. The wide mouthpiece receiver allows the cornopean to be played with a wide-fitting, deep funnel-shaped mouthpiece indistinguishable from that used for keyed bugles, or alternatively with a trumpet mouthpiece that commonly had the same shank taper. Many cornopeans are equipped with a single “clapper” key, operated by the left hand and primarily used to play trills on any note, as in Figure 12.



Figure 12. Cornopean in B-flat etc, with clapper key and protective valve caps, by William Baker, London, 1841-61. Note the false tubing from the mouthpipe to a stay behind the 2nd valve. Edinburgh University Collection of Historic Musical Instruments (6080). Photo: Antonia Reeve.

From the mid-1830s Many British makers produced cornopeans, most prominently the Pace family¹⁸. Very few wide-mouthpiece-receiver instruments with short, horn-influenced wrap

¹⁸ Louise Bacon, The Pace Family of Musical Instrument Makers, 1788-1901. *Galpin Society Journal* 57 (2004)

appear to have been made for use in other countries, although cornopeans made in France and Germany with three valves and clapper key were sold in Britain¹⁹. According to the *Oxford English Dictionary*, the earliest recorded use of the word “cornopean” was in 1837, when it was stated that “The cornopean was first introduced into England ... about four years ago”²⁰. Whether the cornopean was an adaptation of the French cornet à Piston or a native British innovation is not known. Certainly the terms “cornopean” and “cornet” were often used interchangeably at the time (and still are by some writers). The instruments shared their sounding lengths and their predominant use was in bands. The term “cornopean” was also adopted by some instrument makers for later models of instrument such as the “Cornutum or Drawing Room Cornopean” (Joseph Pimlott Oates in 1845), the “Albion Cornopean” (Frederick Pace, patented 1847), the “Serpentine valved cornopean” (Bradshaw, Registered Design, 1849), and “Macfarlane's Patent Cornopean” (Köhler): these later models however tend to have more tapering mouthpipes influenced by the French model cornet, which replaced the cornopean in the 1850s²¹.

CIRCULAR-WRAP INSTRUMENTS

The popularity of the saxhorn family and the cornet as brass and military band instruments resulted in their being produced in large numbers by British makers. This led to variant designs, mostly with the corpus or main tubing in a circular wrap. This was not exclusively a British phenomenon, but British makers were particularly active in this form of innovation. (There were notable French models, also the Austrian valved post-horn.) The British circular instruments were acoustically hardly distinguishable from saxhorns and cornets, but superficially they appeared to be quite distinctive. Each maker had one or more variant designs:

- Henry Distin (circa 1855) ventril horns and ventril trombones (family of bell-up models) several of which survive, as in Figure 13.

pp.117-126.

¹⁹ The Glen Account Book mentions cornopeans bought by Thomas Glen of Edinburgh from Wood & Ivy in London see Arnold Myers (ed). *The Glen Account Book*. Edinburgh: Edinburgh University Collection of Historic Musical Instruments, 1985.

²⁰ Musical World 7 (29 December 1837) p.254; cited in Oxford English Dictionary (1933), s.v. “Cornopean”.

²¹ Arnold Myers, How Different are Cornets and Trumpets ?. *Historic Brass Society Journal* (ISSN 1045-4616), 2012, **24** pp.113-128.



Figure 13. Ventil trombone in B-flat, Boosey & Co, London, 1873}. Edinburgh University Collection of Historic Musical Instruments (4631). Photo: Raymond Parks.

- Henry Distin (1858) centre-bell instruments (family of bell-forward models) none of which survive (if indeed any were ever produced)
- Metzler & Co (1858) sonorophones²² (family of bell-forward models) a few of which survive, see Figure 14.

²² George Metzler and James Waddell, *Improvements in the Construction and Formation of Valve Musical Instruments*. G.B. Patent No 1836, 1858.



Figure 14. Back and front of sonophone in C / B-flat. Metzler, London, p 1858, probably c 1865. Edinburgh University Collection of Historic Musical Instruments (1704). Photo: Raymond Parks.

- Metzler & Co (circa 1860) oval-bell instruments (family of models with bell directed upwards and forwards) a few of which survive, see Figure 15.



Figure 15. Bell-forward tenor horn in E-flat with elliptical bell. Metzler, London, third quarter of 19th century. Edinburgh University Collection of Historic Musical Instruments (4068). Photo: Antonia Reeve.

- Butler (c 1860) vibrating horns (family of models with bell directed upwards and forwards) a few of which survive, see Figure 16.



Figure 16. Cornet vibrating horn in B-flat / A / A-flat etc. Butler, London, 1860-65. Edinburgh University Collection of Historic Musical Instruments (6004). Photo: Dominic Ibbotson.

- Boosey & Co (1883-5) orpheons (family of saxophone-shaped models, copied from Antoine Courtois's antoniophones)²³ a few of which survive. One is shown in Figure 17.

²³ Arnold Myers, Brasswind Innovation and Output of Boosey & Co in the Blaikley Era. *Historic Brass Society Journal* 2002, **14** pp.391-423.



Figure 17. Orpheon baritone [antoniophone] in B-flat. Boosey & Co, London, 1888. Bruno Kampmann collection. Photo: Raymond Parks, courtesy Edinburgh University Collection of Historic Musical Instruments.

The makers of these instruments were more successful in producing eye-catching designs than in creating their niche in the market-place. The production of circular-wrap saxhorns and cornets was tiny compared with the thousands of standard band instruments made. Other circular-wrap models, less close to saxhorns and cornets, are discussed below.

TENOR COR OR MELLOPHONE

The tenor cor superficially resembles the french horn, but has a shorter tube length, a slightly smaller bell, and is arranged for the valves to be operated by the right hand, see Figure 18. It is usually pitched in 6-ft F or in E-flat, sometimes with alternative tuning-slides for lower tonalities. It is probably not a British invention: one of the earliest instruments of this kind was the tenor member of the “Koenig horn” family made by Antoine Courtois, Paris, in the 1850s. These were copied and modified by other makers including Besson (Paris, c1860) and Distin (London, 1860s). The tenor cor was marketed, and used, as an easier substitute for the french horn in bands. In the late 19th century, the London firm of Boosey & Co offered both Koenig horns and tenor cors: they regarded the Koenighorn as a saxhorn wrapped in left-handed french horn configuration, and the tenor cor as a different species with a narrower mouthpipe. Some later designs of tenor cor have continued to have a more tapered mouthpipe and receive a mouthpiece with a narrow stem, rarely quite as narrow as a french horn

mouthpiece stem.

In Britain, tenor cors were also occasionally made in bell-up (cavalry) and bell-forward (forcor) formats. In the U.S.A. the instrument is known as the mellophone, the more expensive models having alternative tuning-slides and quick-change valves for lower tonalities.



Figure 18. Tenor cor with tuning-slides for F and E-flat. J. Higham, Manchester, c 1897. Edinburgh University Collection of Historic Musical Instruments (613). Photo: Raymond Parks.

VOCAL AND BALLAD HORNS

The vocal horn and the ballad horn were species of instrument most commonly associated with Britain. The distinguishing features of this species are a nominal pitch of 8-ft C, a narrower bore than the saxhorn at the same pitch, and a circular wrap. Pitched in C, they allow the player to read vocal parts, typically of songs with pianoforte accompaniment, with the conventional fingering for a three-valve brass instrument - something not possible with band instruments pitched in E-flat or B-flat. The circular wrap makes for a compact instrument, and can be reminiscent of a french horn. These instruments, all having three valves, were marketed for domestic use from the 1860s.

Probably the earliest surviving example is a vocal horn by Rudall, Rose Carte & Co of 20, Charing Cross, London, which almost certainly dates from 1862 (the model was introduced in 1862; later Rudall, Rose Carte & Co brass instruments had inscriptions mentioning their Prize Medal in the 1862 Exhibition), see Figure 19. This has Périnet valves and a narrow

mouthpiece receiver. As with all Rudall Carte vocal horns, the bell is directed forwards. The narrow mouthpiece receiver takes a mouthpiece similar to a french horn mouthpiece; some other Rudall Carte vocal horns had a wide mouthpiece receiver to take a mouthpiece with a conical cup, more like a small French trombone mouthpiece. Several surviving vocal horns have Samson finger-slide valves (see Figure 2). The Rudall, Rose & Carte stock books (preserved in the Horniman Museum, London) interchangeably record these instruments as “Vocal Horns”, “Concert Horns” or “Ballad Horns”.



Figure 19. Vocal horn with Périnet valves. Rudall Rose Carte & Co., London, 1862. Edinburgh University Collection of Historic Musical Instruments (6023). Photo: Raymond Parks.

Both the concept of a compact instrument in 8-ft C and the name “vocal horn” were soon after copied by other makers. An early example, also with bell-forward circular wrap and narrow mouthpiece receiver, by Henry Keat survives in a private British collection²⁴. With its inscription including “190 HIGH HOLBORN / LONDON” it must date from 1856-66²⁵.

The Boosey & Co ballad horn, developed in 1869, was the best-known model of compact instrument in 8-ft C, see Figure 20; its brand name was probably deliberately shared with Boosey's series of ballad concerts established in 1867. On 19 February 1869 Distin & Co entered into stock instrument 20570, a “C Koenig Horn (new model)”, followed on

²⁴ Catalogue of the auction of musical instruments, Vichy, 15 December 2012, lot 575.

²⁵ William Waterhouse, *The New Langwill Index of Musical Wind-Instrument Makers and Inventors*. London: Tony Bingham, 1993.

22 February 1869 by similar instrument, 20569. Also, on 25 March 1869 Distin & Co entered into stock instrument 20587, “C. Koenig Horn best”. Instruments 20569 and 20587 were then sold to Boosey & Co, who entered into stock in February 1869 a “Koenig Horn in C. new model”, which was probably 20569. However they entered 20587 into stock as a “C Ballad Horn”. Subsequent instruments (20724-5, 20841-6 etc) were entered into Distin & Co stock as “Ballad Horns” and sold to various customers including Boosey & Co²⁶. By 1869 Distin & Co. was wholly owned by Boosey & Co, so sales between the two were merely internal transactions.



Figure 20. The earliest surviving ballad horn, in C with alternative tuning-slide for B-flat, Distin & Co, 1869. Edinburgh University Collection of Historic Musical Instruments (5836). Photo: Dominic Ibbotson.

The ballad horn was a relatively successful model, with 200 being produced in the six years following its introduction. Other makers made copies and adopted the “ballad horn” name. Many examples survive in collections. Ballad horns were made by Boosey & Co until 1925. The bell-up (“ventil ballad horn”) was much rarer: only two were made, one of which survives in Edinburgh, at the Edinburgh University Collection of Historic Musical Instruments (604).

²⁶ Distin & Co Workshop Order Books and Stock Books in the Boosey and Hawkes archive at the Horniman Museum, London.

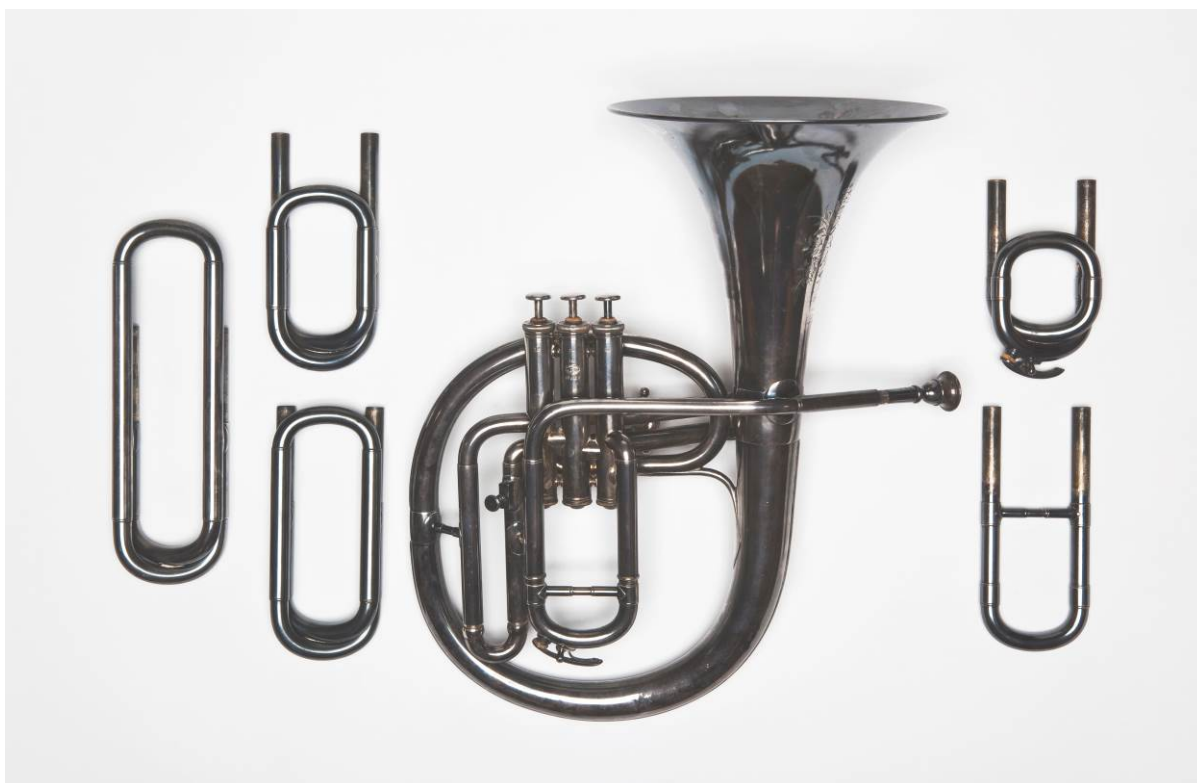


Figure 21. “Vocal horn” or bell-up tenor cor in F with tuning-slides for E, E-flat, D, D-flat and C. F. Besson, London, probably 1876. Edinburgh University Collection of Historic Musical Instruments (4197). Photo: Dominic Ibbotson.

The instrument shown in Figure 21 was sold by Besson under the name “Vocal horn”²⁷. This is anomalous, since only with its longest tuning-slide does it stand in 8-ft C and serve to play vocal music without transposition. It is essentially a bell-up tenor cor. Six of these instruments are known to survive, dating from c 1876 to 1891 and all inscribed with Besson's London address.

CORNOPHONE

The cornophones were somewhat similar to the saxhorn, but initially had a very narrow mouthpiece receiver which made the tenor closer to the smaller Wagner tuba. They had a distinctive oval wrap with a forward-directed bell, see Figure 22. Most cornophones had three valves in the normal arrangement, the tenor usually four. The British patent on the cornophone family was filed late in 1890²⁸. It is likely that cornophones were made in Britain from circa 1895 as most surviving cornophones have an inscription on the valves incorporating “S.G.D.G”, even when the bell has the “F. BESSON / ... / LONDON” inscription; “S.G.D.G” (*sans garantie du gouvernement*, a weak form of French patent) also appears on contemporary Paris-made Besson instruments, and the serial numbers are rather low for the London factory in the early 1890s. They were marketed from the London Besson premises in Euston Road as early as 1891. Five sizes were offered: B-flat Cornettito;

²⁷ An F. Besson poster naming this and other instruments is reproduced in Arnold Myers and Niles Eldredge, *The Brasswind Production of Marthe Besson's London Factory*. *Galpin Society Journal* 2006 **LIX**, pp.43-76.

²⁸ Adolphe Fontaine-Besson, *A new family of brass wind musical instruments*. G.B. Patent No 16358, 1890.

F & E-flat Alto; C & B-flat Tenor; C & B-flat Tuba with 3 or 4 valves; E-flat Bass. It was claimed that they were used in church choirs, especially the Tuba in C, also as horn substitutes²⁹. However, although extant examples point to some use, there is no independent evidence for any specific use in Britain. Cornophones, which were made until soon after 1910, were a bold attempt to introduce a different voice to the palette of tone colours. However, the time for introducing new families of brass instrument had passed by 1890. Extant instruments are responsive and rewarding to the player, although compared with saxhorns and Wagner tubas, the intonation is problematic. Some 26 cornophones (only 7 with the London inscription) are known to survive in museums and private collections.



Figure 22. Cornophone cornettito in B-flat (the copper-plating is not original). F. Besson, London, c 1893. Edinburgh University Collection of Historic Musical Instruments (6033). Photo: Antonia Reeve.

BACH TRUMPETS AND KNELLER HALL FANFARE TRUMPETS

Following the performances by Julius Kosleck of baroque trumpet music in London in 1885³⁰, some British manufacturers produced “Bach” trumpets. These were straight trumpets used in the performance of baroque music with the erroneous notion that they were in some

²⁹ Anonymous article (probably based on Besson's advertising material), in *Orchestral Times and Bandsman*, Vol. IV, 1891, pp.201-3. The Alto Cornophone was intended “to take horn parts in brass or military bands” and the Tuba Cornophone “for bass parts or leading choirs” had already been advertised in *Brass Band News*, November 1890.

³⁰ Edward Tarr, The “Bach trumpet” in the nineteenth and twentieth centuries. In: Michale Latcham (ed.), *Musique Ancienne - instruments et imagination*. Berne: Peter Lang, 2006.

way close to the instruments of the time of Bach and Handel. Initially these were, like Kosleck's, 2-valve instruments in 5-ft A, as in Figure 23.

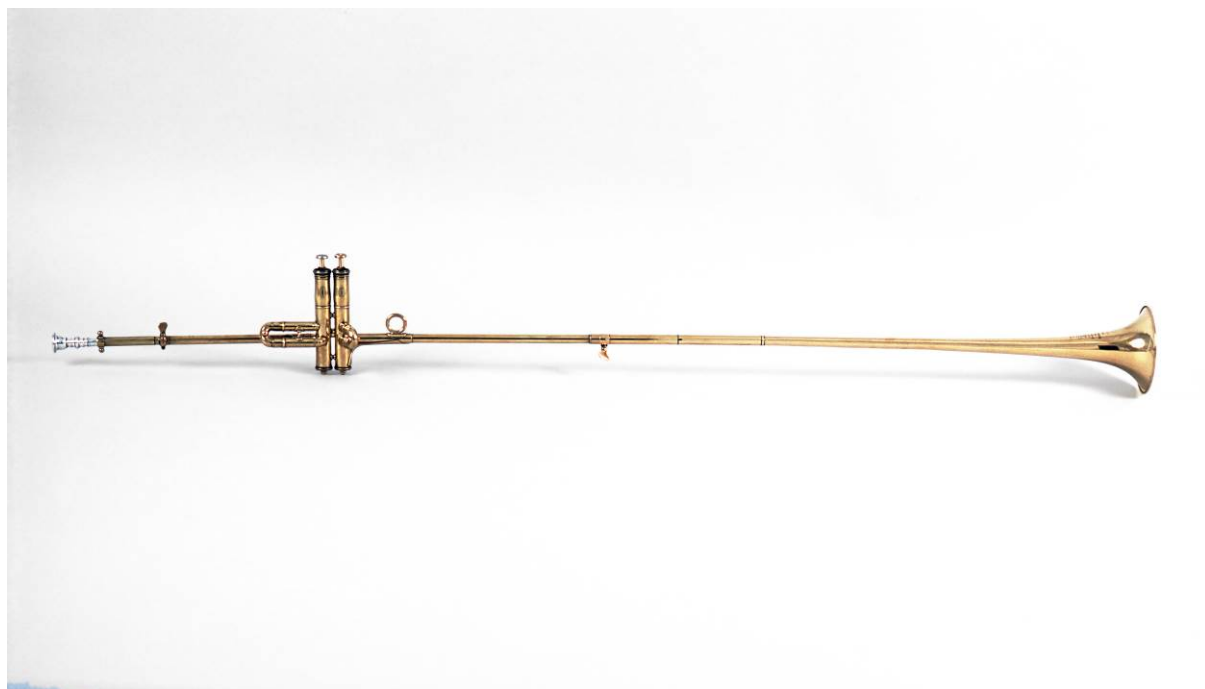


Figure 23. Bach trumpet in A. Boosey & Co, London, 1909. Edinburgh University Collection of Historic Musical Instruments (843). Photo: Antonia Reeve.

Later Bach trumpets, also marketed as “Aida trumpets”, were smaller: in B-flat, D and E-flat. The firm of Hawkes & Son produced most of these (the smallest being close in bore profile to soprano cornets), and most professional players had one which they could produce for large-scale performances of “Messiah”, a tradition which lasted well made the middle of the 20th century.

Boosey & Co made a set of Aida trumpets in Verdi's original tonalities (two in B-natural, two in A-flat) in 1934. However, in June 1935 Boosey & Hawkes made batches of “B-flat Aida Trumpet (=cornet length) Hawkes Patn.”, “B-flat Tenor Aida Trumpets (ie B-flat Trombones)”, and “Bass Aida Trumpets (ie G Trombones)”³¹. In 1938 a soprano trumpet in E-flat was added; in this year, the term “Coronation Trumpet” (referring to the coronation of King George VI) was also used for these instruments. They were subsequently approved by the Royal Military School of Music (Kneller Hall): the Boosey & Hawkes factory ledgers record that the four sizes were “Approved by KH as standard model 11.10.38”³². From this genetic mutation of Verdi's stage trumpets sprang the now traditional British Fanfare trumpet, as in Figure 24. The sight and sound of the long ceremonial valved trumpets with banners hanging from the bell became a prominent symbol of state occasions in Britain. In the period up to 1954 Boosey & Hawkes made 30 E-flat soprano, 179 B-flat melody, 109 B-flat tenor, and 48 G bass fanfare trumpets³³. (The current production model of bass fanfare trumpet is in B-flat rather than G.)

³¹ Boosey & Hawkes Instrument Books in the Boosey and Hawkes archive at the Horniman Museum, London.

³² Ibid.

³³ Arnold Myers, Brasswind Manufacturing at Boosey & Hawkes 1930-1959. *Historic Brass Society Journal* 2003, **15** pp.55-72.



Figure 24. Set of state fanfare trumpets. Besson, London, c 1986. Courtesy of the Band of the Welsh Guards.

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